



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/775,531

02/09/2004

Karl Dias

021756-003700US

1070

51206

7590

04/15/2009

TOWNSEND AND TOWNSEND AND CREW LLP
TWO EMBARCADERO CENTER
8TH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

CHEN, QING

ART UNIT

PAPER NUMBER

2191

MAIL DATE

DELIVERY MODE

04/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,531	DIAS ET AL.	
	Examiner	Art Unit	
	Qing Chen	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-18 and 20-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-18 and 20-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is in response to the amendment filed on January 19, 2009, entered by the RCE filed on the same date.
2. **Claims 1-4, 6-18, and 20-33** are pending.
3. **Claims 1, 2, 4, 7, 8, 10-18, 20-26, and 29** have been amended.
4. **Claims 5 and 19** have been canceled.
5. The objections to Claims 2-4, 6-13, 16-18, and 20-25 are withdrawn in view of Applicant's amendments to the claims.
6. The 35 U.S.C. § 112, first paragraph, rejections of Claims 14-18, 20-25, and 29-33 are withdrawn in view of Applicant's amendments to the claims.
7. It is noted that Claim 1 contains amendments that are submitted without markings to indicate the changes that have been made relative to the immediate prior version of the claim.

Continued Examination Under 37 CFR 1.114

8. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 19, 2009 has been entered.

Response to Amendment

Claim Objections

9. **Claims 1, 2, 14-18, and 20-25** are objected to because of the following informalities:

- **Claim 1** contains a typographical error: “[T]he one or more performance problem” should read -- the one or more performance problems --.

- **Claim 2** recites the category of invention “[t]he computer-implemented method.”

Applicant is advised to change this category of invention to read “[t]he method” for the purpose of providing it with proper explicit antecedent basis.

- **Claim 14** recites the limitation “the method.” Applicant is advised to change this limitation to read “the computer-implemented method” for the purpose of providing it with proper explicit antecedent basis.

- **Claims 15-18 and 20-25** depend on Claim 14 and, therefore, suffer the same deficiency as Claim 14.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2191

11. **Claims 1-4, 6-18, and 20-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over **US 6,035,306 (hereinafter “Lowenthal”)** in view of **US 4,849,879 (hereinafter “Chinnaswamy”)**.

As per **Claim 1**, Lowenthal discloses:

- receiving at the ADDM device operations performed in a database classified as one or more performance problems (*see Column 5: 11-25, “... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity “hot-spot” and costly delays in servicing a customer request for a record.”*);
- determining with the ADDM device one or more values that quantify an impact for the one or more performance problems based on performance of operations in the database (*see Figure 18; Column 13: 50-56, “The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem.”*);
- determining a first performance problem with the ADDM device from the one or more performance problems based on a matching between the one or more values for the one or more performance problems (*see Column 13: 50-59, “The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem. This*

Art Unit: 2191

process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified.”); and

- generating information with the ADDM device indicative of a recommendation for a solution for the first performance problem (*see Column 14: 22-39, “First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.”*).

However, Lowenthal does not disclose:

- classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem.

Chinnaswamy discloses:

- classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem (*see Column 10: 9-52, “The rules often involve the comparison of metrics and parameters either to themselves or to certain thresholds to see whether the criteria of the rules (e.g., greater than, less than, etc.) have been satisfied.” and “The rules involved in the preferred embodiment can generally be classified into memory rules, CPU rules, I/O rules, channel rules, resource rules, and cluster rules. Presently, due to the number of rules in the preferred embodiment, the implementation of the rules is done by way of programs which incorporate both the thresholds and the rules together.” and “In the decision tree shown in FIGS. 9A-9I, 10A and 10B, and 11A-11D, the circular elements are either decision points or stop points indicating, respectively, tests to be made or exits from a particular decision tree. The tests which may be made are printed*

Art Unit: 2191

along side of the circular nodes and are explained in additional detail in the text. The square boxes contain rule numbers. The message template for the rules are in Appendices 1-6 at the end of this description.”).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Chinnaswamy into the teaching of Lowenthal to include classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem. The modification would be obvious because one of ordinary skill in the art would be motivated to provide performance tuning and evaluation of a database according to predetermined rules and thresholds (see Chinnaswamy – Column 3: 3-7).

As per **Claim 2**, the rejection of **Claim 1** is incorporated; however, Lowenthal does not disclose:

- wherein determining the first performance problem with the ADDM device from the one or more performance problems based on the matching comprises automatically analyzing the one or more symptoms defined by the at least one rule with the ADDM device based on the one or more values to identify the root performance problem defined by the at least one rule as the first performance problem.

Chinnaswamy discloses:

- wherein determining the first performance problem with the ADDM device from the one or more performance problems based on the matching comprises automatically analyzing the one or more symptoms defined by the at least one rule with the ADDM device based on the one

Art Unit: 2191

or more values to identify the root performance problem defined by the at least one rule as the first performance problem (*see Column 10: 9-17, "In general, the analysis portion of this invention involves the application of certain rules to the metrics and parameters collected during the data collection operation. The rules often involve the comparison of metrics and parameters either to themselves or to certain thresholds to see whether the criteria of the rules (e.g., greater than, less than, etc.) have been satisfied. If all the criteria for a rule have been satisfied, then the rule is said to trigger."*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Chinnaswamy into the teaching of Lowenthal to include wherein determining the first performance problem with the ADDM device from the one or more performance problems based on the matching comprises automatically analyzing the one or more symptoms defined by the at least one rule with the ADDM device based on the one or more values to identify the root performance problem defined by the at least one rule as the first performance problem. The modification would be obvious because one of ordinary skill in the art would be motivated to provide performance tuning and evaluation of a database according to predetermined rules and thresholds (*see Chinnaswamy – Column 3: 3-7*).

As per **Claim 3**, the rejection of **Claim 2** is incorporated; and Lowenthal further discloses:

- wherein symptoms defined by the set of rules are classified from a first set of performance problems to a second set of performance problems (*see Figures 14-18; Column 11: 18-21, "In the described embodiment, the data is displayed as a bar graph with the stripe sets*

Art Unit: 2191

arranged in descending order of usage, as shown in FIG. 14.”; Column 12: 22-28, “After one set of data is displayed, a user can display usage data related to any of the displayed items. Referring again to FIG. 14, further analysis may be carried out for any of the stripe sets shown. By right-clicking on bar 83, a menu 84 may be brought up which allows a user to select the disk, file volume, plex, or tablespace usage associated with stripe 14 for display.”).

As per **Claim 4**, the rejection of **Claim 2** is incorporated; and Lowenthal further discloses:

- wherein generating the information with the ADDM device indicative of the recommendation for a solution comprises generating the information to include symptoms that were analyzed by the ADDM device to determine the root performance problem (*see Column 14: 22-39, “First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.”).*

As per **Claim 6**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- wherein the one or more values comprising time values that quantify the impact of the one or more performance problems (*see Figure 18; Column 13: 50-56, “The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity*

Art Unit: 2191

on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem.”).

As per **Claim 7**, the rejection of **Claim 6** is incorporated; and Lowenthal further discloses:

- determining the time values with the ADDM device using at least one of a time model that classifies operations in the database as wasteful operations using a first set of rules associated with the time model and a wait model that classifies operations in the database waiting for completion of one or more external events using a second set of rules associated with the wait model (*see Figure 13; Column 9: 29-42, “Several different types of data are collected for the disk drive, plex, and database file usage samples. These data types will be referred to a properties below. The properties collected include the following: number of reads per second; number of writes per second; number of kilobytes read per second; number of kilobytes written per second; queue length, which is the average number of I/O requests pending for a disk drive during the measurement period; service time, which is the average time in milliseconds for an I/O request to be completed; percent busy, which represents the average utilization factor for a disk during the measurement period; and percent wait, which is the average percentage of time that there are transactions waiting for service during the measurement period.”; Column 10: 48-51, “Next the user selects the desired property to be displayed from the drop down menu 74. The available properties will vary, depending on the particular item selected in I/O type menu 72.”).*

Art Unit: 2191

As per **Claim 8**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- determining with the ADDM device one or more operations in the database that caused the first performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*); and
- analyzing stored information with the ADDM device for the one or more operations absent direct user intervention to generate the information with the ADDM device indicative of the recommendation for the solution (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 9**, the rejection of **Claim 8** is incorporated; and Lowenthal further discloses:

- wherein the stored information comprises a snapshot of information for the one or more operations (*see Column 9: 20-23, "These measurements provide a series of snapshots of the system performance which are used by the analysis tool described below to diagnose system problems."*).

As per **Claim 10**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

Art Unit: 2191

- automatically determining with the ADDM device the recommendation for the solution in response to determining the first performance problem with the ADDM device (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 11**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- determining a recommendation rule with the ADDM device from a set of recommendation rules associated with the first performance problem, each recommendation rule in the set of recommendation rules indicative of at least one recommendation for a solution for the first performance problem (*see Column 14: 17-39, "Once the user has selected a time period and property, the present invention carries out the remainder of the procedure shown in FIG. 19 to recommend placement actions to take out."*);

- determining with the ADDM device one or more operations that caused the first performance problem (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106."*);

- applying the recommendation rule with the ADDM device to the one or more operations (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104.*

Art Unit: 2191

Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106.”); and

- determining a recommendation with the ADDM device for the solution in response to a determination at the ADDM device that the one or more operations satisfy the recommendation rule (see Column 14: 17-39, “If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.”).

As per **Claim 12**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- outputting the recommendation for the solution using the ADDM device (see Column 14: 40-45, “Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again.” It is inherent that the recommendation is outputted, so the DBA can make decisions regarding the recommendation.).

As per **Claim 13**, the rejection of **Claim 1** is incorporated; and Lowenthal further discloses:

- generating information with the ADDM device specifying one or more operations performed in the database that are not causing performance problems (see Column 13: 60-62, “... the lightly used resources of the database have also been identified ...”).

As per **Claim 14**, Lowenthal discloses:

- receiving information at a database monitoring device classifying operations performed in a database as one or more performance problems (*see Column 5: 11-25, "... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."*);
- collecting information using the database monitoring device that quantifies an impact for one or more operations performed in the database (*see Figures 9-11; Column 9: 28-41, "Several different types of data are collected for the disk drive, plex, and database file usage samples."*);
- associating the information for one or more operations with the one or more performance problems using the database monitoring device (*see Figures 9-11; Column 9: 43-67, "FIG. 9 shows the format for the data taken and stored for the disk performance samples, along with exemplary data." and "FIG. 10 shows the format for the data taken and stored for the plex performance samples, along with exemplary data." and "FIG. 11 shows the format for the data taken and stored for the Oracle file performance samples, along with exemplary data."*);
- analyzing the associated information for the one or more performance problems with the database monitoring device based on the set of rules classifying operations performed in the database into the one or more performance problems to determine a first performance problem with the database monitoring device from the one or more performance problems (*see Figures*

Art Unit: 2191

13-18; Column 5: 11-25, "... if Table A and Index 1 are both heavily used, the three disks that the stripes of these objects share will be overloaded, and access requests will queue, generating an activity "hot-spot" and costly delays in servicing a customer request for a record."; Column 13: 57-62, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified. At this point, the lightly used resources of the database have also been identified, facilitating the replacement of the problem objects."); and

- generating information with the database monitoring device indicative of a recommendation for a solution for the first performance problem (see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.");

However, Lowenthal does not disclose:

- classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem.

Chinnaswamy discloses:

- classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem (see Column 10: 9-52, "The rules often involve the comparison of metrics and parameters either to themselves or to certain thresholds to see whether the criteria of the rules (e.g., greater than, less than, etc.) have been satisfied." and "The rules involved in the preferred embodiment can

Art Unit: 2191

generally be classified into memory rules, CPU rules, I/O rules, channel rules, resource rules, and cluster rules. Presently, due to the number of rules in the preferred embodiment, the implementation of the rules is done by way of programs which incorporate both the thresholds and the rules together.” and “In the decision tree shown in FIGS. 9A-9I, 10A and 10B, and 11A-11D, the circular elements are either decision points or stop points indicating, respectively, tests to be made or exits from a particular decision tree. The tests which may be made are printed along side of the circular nodes and are explained in additional detail in the text. The square boxes contain rule numbers. The message template for the rules are in Appendices 1-6 at the end of this description.”).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Chinnaswamy into the teaching of Lowenthal to include classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem. The modification would be obvious because one of ordinary skill in the art would be motivated to provide performance tuning and evaluation of a database according to predetermined rules and thresholds (see Chinnaswamy – Column 3: 3-7).

As per **Claim 15**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- determining with the database monitoring device when one or more operations that are associated with the one or more performance problems are being performed (see Figure 18; Column 13: 50-56, “The DBA might then choose to look at the samples for plex 14A I/O over the

Art Unit: 2191

time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem.”); and

- timing the one or more operations that are associated with the one or more performance problems with the database monitoring device to generate one or more time values for the one or more operations using the database monitoring device that quantify the impact of the one or more operations (*see Figure 18; Column 13: 50-56, “The DBA might then choose to look at the samples for plex 14A I/O over the time period from 5:00 am to 1:00 PM, resulting in the display of FIG. 18. FIG. 18 shows that there is spike of abnormally high activity on plex 14A during the time period of poor performance, indicating that the DBA is homing in on the problem.”).*

As per **Claim 16**, the rejection of **Claim 15** is incorporated; and Lowenthal further discloses:

- wherein the one or more operations that are associated with the one or more performance problems are determined with the database monitoring device based on at least one of a time model that classifies a first set of operations in the database as wasteful operations using a first set of rules associated with the time model and a wait model that classifies a second set of operations in the database waiting for completion of one or more external events using a second set of rules associated with the wait model (*see Figure 13; Column 9: 29-42, “Several different types of data are collected for the disk drive, plex, and database file usage samples. These data types will be referred to a properties below. The properties collected include the*

Art Unit: 2191

following: number of reads per second; number of writes per second; number of kilobytes read per second; number of kilobytes written per second; queue length, which is the average number of I/O requests pending for a disk drive during the measurement period; service time, which is the average time in milliseconds for an I/O request to be completed; percent busy, which represents the average utilization factor for a disk during the measurement period; and percent wait, which is the average percentage of time that there are transactions waiting for service during the measurement period.”; Column 10: 48-51, “Next the user selects the desired property to be displayed from the drop down menu 74. The available properties will vary, depending on the particular item selected in I/O type menu 72.”).

As per **Claim 17**, the rejection of **Claim 14** is incorporated; however, Lowenthal does not disclose:

- wherein analyzing the associated information for the one or more performance problems with the database monitoring device based on the set of rules classifying operations performed in the database into the one or more performance problems to determine the first performance problem from the one or more performance problems comprises automatically analyzing the one or more symptoms defined by at least one rule in the set of rules with the database monitoring device to identify the root performance problem defined by the at least one rule using the database monitoring device as the first performance problem.

Chinnaswamy discloses:

- wherein analyzing the associated information for the one or more performance problems with the database monitoring device based on the set of rules classifying operations

Art Unit: 2191

performed in the database into the one or more performance problems to determine the first performance problem from the one or more performance problems comprises automatically analyzing the one or more symptoms defined by at least one rule in the set of rules with the database monitoring device to identify the root performance problem defined by the at least one rule using the database monitoring device as the first performance problem (*see Column 10: 9-17, "In general, the analysis portion of this invention involves the application of certain rules to the metrics and parameters collected during the data collection operation. The rules often involve the comparison of metrics and parameters either to themselves or to certain thresholds to see whether the criteria of the rules (e.g., greater than, less than, etc.) have been satisfied. If all the criteria for a rule have been satisfied, then the rule is said to trigger."*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Chinnaswamy into the teaching of Lowenthal to include wherein analyzing the associated information for the one or more performance problems with the database monitoring device based on the set of rules classifying operations performed in the database into the one or more performance problems to determine the first performance problem from the one or more performance problems comprises automatically analyzing the one or more symptoms defined by at least one rule in the set of rules with the database monitoring device to identify the root performance problem defined by the at least one rule using the database monitoring device as the first performance problem. The modification would be obvious because one of ordinary skill in the art would be motivated to provide performance tuning and evaluation of a database according to predetermined rules and thresholds (*see Chinnaswamy – Column 3: 3-7*).

As per **Claim 18**, the rejection of **Claim 17** is incorporated; and Lowenthal further discloses:

- wherein generating the information with the database monitoring device indicative of the recommendation for a solution comprises generating the information with the database monitoring device to include the one or more symptoms that were analyzed to determine the root performance problem (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 20**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- determining at the database monitoring device one or more operations in the database that caused the first performance problem (*see Column 13: 57-59, "This process would continue with the DBA next looking at the individual tablespaces and files stored in plex 14A until the database objects causing the problem are identified."*); and

- reviewing stored information for the one or more operations at the database monitoring device to generate the information with the database monitoring device indicative of the recommendation for the solution (*see Column 14: 22-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more*

Art Unit: 2191

that one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.”).

As per **Claim 21**, the rejection of **Claim 20** is incorporated; and Lowenthal further discloses:

- wherein the stored information comprises a snapshot of information for the one or more operations (*see Column 9: 20-23, “These measurements provide a series of snapshots of the system performance which are used by the analysis tool described below to diagnose system problems.”).*

As per **Claim 22**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- automatically determining with the database monitoring device the recommendation for the solution in response to determining the first performance problem (*see Column 14: 22-39, “First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106. If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110.”).*

As per **Claim 23**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

Art Unit: 2191

- determining with the database monitoring device a recommendation rule from a set of recommendation rules associated with the first performance problem, each recommendation rule in the set of recommendation rules indicative of at least one recommendation for a solution to the first performance problem (*see Column 14: 17-39, "Once the user has selected a time period and property, the present invention carries out the remainder of the procedure shown in FIG. 19 to recommend placement actions to take out."*);
- determining with the database monitoring device one or more operations that caused the first performance problem (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106."*);
- applying the recommendation rule with the database monitoring device to the one or more operations (*see Column 14: 17-39, "First, the system determines the busiest stripe set, block 104. Next, the system determines whether the busiest stripe set has more than one plex stored in it, block 106."*); and
- determining a recommendation for the solution with the database monitoring device in response to a determination at the database monitoring device that the one or more operations satisfy the recommendation rule (*see Column 14: 17-39, "If only a single logical file is stored on the stripeset, the system will recommend using more disks for the stripeset, block 110."*).

As per **Claim 24**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

Art Unit: 2191

- outputting the recommendation for the solution using the database monitoring device
(see Column 14: 40-45, “Following the above procedure, and assuming that a DBA has changed the placement in accordance with the recommendation, the database system is monitored during normal operation for a period of time so that new samples can be gathered with the new placement in operation. Then the analysis of FIG. 19 would be carried out again.” It is inherent that the recommendation is outputted, so the DBA can make decisions regarding the recommendation.).

As per **Claim 25**, the rejection of **Claim 14** is incorporated; and Lowenthal further discloses:

- generating information with the database monitoring device specifying one or more operations performed in the database that are not causing performance problems *(see Column 13: 60-62, “... the lightly used resources of the database have also been identified ...”).*

Claims 26-28 are computer-readable medium claims corresponding to the computer-implemented method claims above (Claims 1, 10, and 11) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1, 10, and 11.

Claims 29-33 are computer-readable medium claims corresponding to the computer-implemented method claims above (Claims 14, 15, 20, 22, and 23) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 14, 15, 20, 22, and 23.

Response to Arguments

12. Applicant's arguments with respect to Claims 1, 14, 26, and 29 have been considered but are moot in view of the new ground(s) of rejection.

In the Remarks, Applicant argues:

a) In Col. 10, lines 24-52, Chinnaswamy merely suggests that rules themselves can generally be classified. Thus, Chinnaswamy does not disclose receiving at the ADDM device operations performed in a database classified as one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem, as recited in amended claim 1, but merely that the rules of Chinnaswamy themselves can simply be classified.

Examiner's response:

a) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, without acquiescing to the Applicant's assertion that Chinnaswamy does not disclose receiving at the ADDM device operations performed in a database classified as one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem, the Examiner first submits that Chinnaswamy is relied upon by the Examiner for its specific teaching of classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem. Lowenthal clearly discloses receiving at

Art Unit: 2191

the ADDM device operations performed in a database classified as one or more performance problems and thus, Applicant's argument regarding Chinnaswamy does not disclose receiving at the ADDM device operations performed in a database classified as one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem is, at best, moot.

Second, with respect to the Applicant's assertion that Chinnaswamy does not disclose receiving at the ADDM device operations performed in a database classified as one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem, as previously pointed out in the Final Rejection (mailed on 07/21/2008) and further clarified hereinafter, the Examiner respectfully submits that Chinnaswamy clearly discloses "classifying one or more performance problems through a set of rules, each rule in the set of rules defining one or more symptoms and at least one root performance problem" (*see Column 10: 9-52, "The rules often involve the comparison of metrics and parameters either to themselves or to certain thresholds to see whether the criteria of the rules (e.g., greater than, less than, etc.) have been satisfied."* and *"The rules involved in the preferred embodiment can generally be classified into memory rules, CPU rules, I/O rules, channel rules, resource rules, and cluster rules. Presently, due to the number of rules in the preferred embodiment, the implementation of the rules is done by way of programs which incorporate both the thresholds and the rules together."* and *"In the decision tree shown in FIGS. 9A-9I, 10A and 10B, and 11A-11D, the circular elements are either decision points or stop points indicating, respectively, tests to be made or exits from a particular decision tree. The tests which may be made are printed along side of the circular nodes and are explained in*

Art Unit: 2191

additional detail in the text. The square boxes contain rule numbers. The message template for the rules are in Appendices 1-6 at the end of this description.”). Note that the rules are involved in the comparison of performance metrics and parameters either to themselves or to certain thresholds to determine whether the criteria of the rules have been satisfied (classifying one or more performance problems through a set of rules). Thus, the memory rules pertain to the diagnosis of memory performance problems, the CPU rules pertain to the diagnosis of CPU performance problems, the I/O rules pertain to the diagnosis of I/O performance problems, and so forth. Attention is drawn to Figures 9A-9I, 10A, 10B, and 11A-11D of Chinnaswamy which clearly illustrate rule decision trees with decision points (one or more symptoms) or stop points indicating tests to be made or exits from a particular decision tree, respectively. Ultimately, the decision points of the rule decision trees would lead to the root cause of a performance problem.

Therefore, for at least the reasons set forth above, the rejections made under 35 U.S.C. § 103(a) with respect to Claims 1, 14, 26, and 29 are proper and therefore, maintained.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2191

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Q. C./

Examiner, Art Unit 2191

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191